



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D2054

Job Sheet 168310



Part No: D2054

Job Qty: 10 ea

Part Name: Bushing - Delrin



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 11/13/17

Job Tracking No:

Due Date: 11/16/17

Created By: Linda Lacelle

Type: Stock

Description:

Note: DWG REV B IPP A1 03.01.21 Revise Dwg Rev B; added Black Teflon or Delring; Made on Cobra RF

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	10 Ea	11/15/17	11/15/17	0.00	0.00	Start Up Machining		DAS 23
100	Hardinge	10 pcs	11/16/17	11/16/17	0.00	0.47	Hardinge		9-89
110	QC	10 pcs	11/16/17	11/16/17	0.00	0.00	QC2		18-01-11
120	QC	10 pcs	11/16/17	11/16/17	0.00	0.00	QC8		AT 18/01/17
130	Packaging	10 pcs	11/16/17	11/16/17	0.00	0.00	Packaging3 GA		
140	QC21-SA	10 Ea	11/16/17	11/16/17	0.00	0.00	QC21		

Part Op 100 - Machine as per folio FA
Descriptions: 130 - LOCATION : GA

21 9-89 JAN 18 2016

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	MDELRRNR1.000	1	10	0	0

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Bushing	1.000Inches ± 0.030	1.030 0.970		
2	Bushing	0.063Inches ± 0.010	0.073 0.053		
3	Bushing	0.500Inches ± 0.010	0.510 0.490		
4	Bushing	0.030Inches ± 0.030	0.060 0.000		
5	Bushing	45Degrees ± 0	45 45		
6	Bushing	0.016Inches ± 0.010	0.026 0.006	Radius	
7	Bushing	0.625Inches + 0.005 - 0.000	0.630 0.625		
8	Bushing	0.510Inches + 0.005 - 0.000	0.515 0.510		

Plex 11/14/17 8:03 AM dart.boucher.sylvie

DQA: _____ Date: _____

WOR

QA Closed: _____ Date: _____

Work Order: _____

Part No. _____

NCR No. _____

Suspect

Date : _____

Step #: _____

Description Work Order Deviation



S031100



Bushing – Delrin

Dart Aerospace Ltd.

1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com



Engineering
Quality
Other

(1042) Approval

Completed By

and / Supervisor
Validation Verification

QA Coordinator
Approval

PART NO: D2054
Revision:
Operation: Start up Operation
Change No:

Mfg Date: 01/10/18
Job No: 168310

Root Cause

Environment	☐	No Re-verification	☐
Design	☐	Operator	☐
Doc/Data	☐	Offset/Setup	☐
Equip/Tooling	☐	Supplier	☐
Handling/Pre	☐	Training	☐
Material	☐	Use for Testing	☐
Internal Transport	☐	Poor Information	☐
Tribal Knowledge	☐	Rushing	☐
LOA	☐	Product Improvement	☐
Substation	☐	Process Improvement	☐
Past Expiry Date	☐	Manufacturing Process	☐
Misidentified	☐	Past Due	☐

☐	Pressure/Forced
☐	Bending
☐	Centre Not Concentric
☐	Cracks
☐	Crimp/Kink/Ripple/Wave
☐	Cuffs
☐	Crushing
☐	Heat Treat
☐	Wave/Twist in Tube
☐	Marks/Chatter

FAULT CATEGORY

☐	Temperature/Cure
☐	Set-up
☐	BOM/Route
☐	Broken/Damage/Defect
☐	Inspection Incomplete/Unqualified
☐	Contamination
☐	Countersink
☐	Cut Too Short
☐	Instructions Incomplete/Unclear
☐	Drill Holes

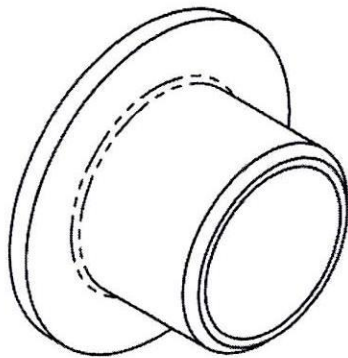
☐	Power Loss/Surge
☐	Folio/Program
☐	Grain
☐	Weld
☐	Wrong Stock Pulled
☐	Out of Sequence
☐	Off-set
☐	Mislabeled
☐	Fit/Function
☐	Misaligned/off center

☐	Positioned Wrong
☐	Outside Dimensions
☐	Over/Under tolerance
☐	Part Incorrect
☐	Part Lost/Missing
☐	Part Moved
☐	Drawing
☐	Finish
☐	Misread
☐	Turning Sequence

OTHER :

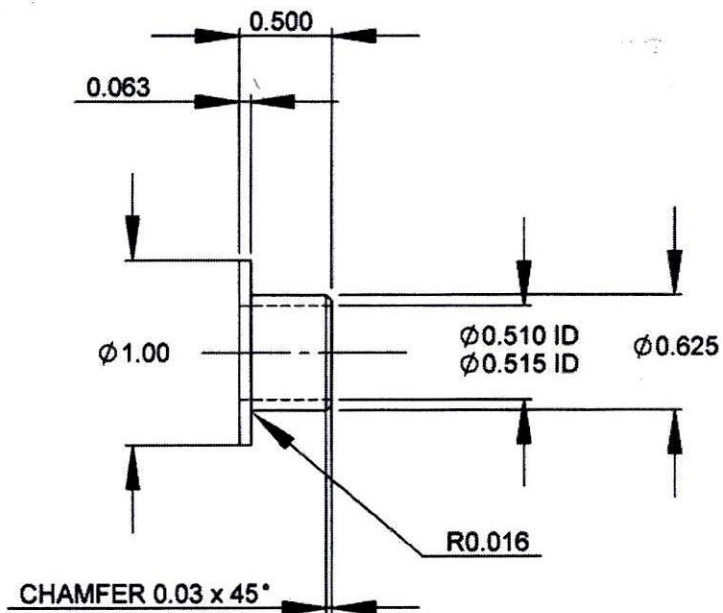


RELEASED
01.12.21



ISOMETRIC DETAIL (SCALE 2:1)

DESIGN JB	DRAWN BY UP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D2054	REV. B SHEET 1 OF 1
DATE 01.12.20	TITLE BUSHING		SCALE 1:1
--	92.05.13	NEW ISSUE	
A	01.06.05	CHANGE TOL. ON ID.	
B	01.12.20	REDRAW; ADD DELRIN OPTION; ADD NOTES	



D2054 BUSHING

MATERIAL: BLACK TEFLON
or BLACK UHMW
or BLACK DELRIN

TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
ALL DIMENSIONS ARE IN INCHES

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : _____									



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Inventory

Operation Number	Operation	Serial Number	Job	Quantity	Weight	Original Serial Number	Location	Container	Status	Added	Special Comments	Label	Supplier	Change No
Part Number: D2054 Revision: Bushing - Delrin														
140	QC21-SA	S031100	168310	17 Ea	0	S031100	GA		Stock	1/10/2018	*			
Operation Totals:		1		17	0									
Part Totals:		1		17	0									
Part Number: MDELINR1.000 Revision: Delrin Round Bar 1" Color: Black														
100	Receive Ft	FM138190	168310	0 ft	0	M138190	MAT039		Stock	10/10/2017	*			
Operation Totals:		1		0	0									
Part Totals:		1		0	0									
Totals:		2		17	0									

Plex 1/19/2018 6:08 AM Dart.Lajeunesse.Marie

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
☐ OTHER : _____					